FIG. 1A

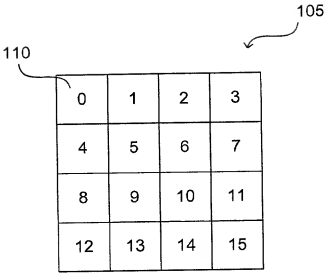

FIG. 1B

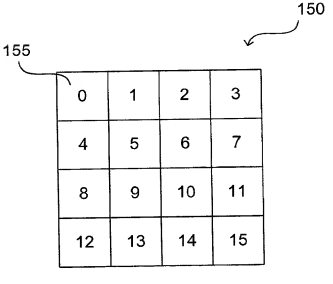

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FIG. 2

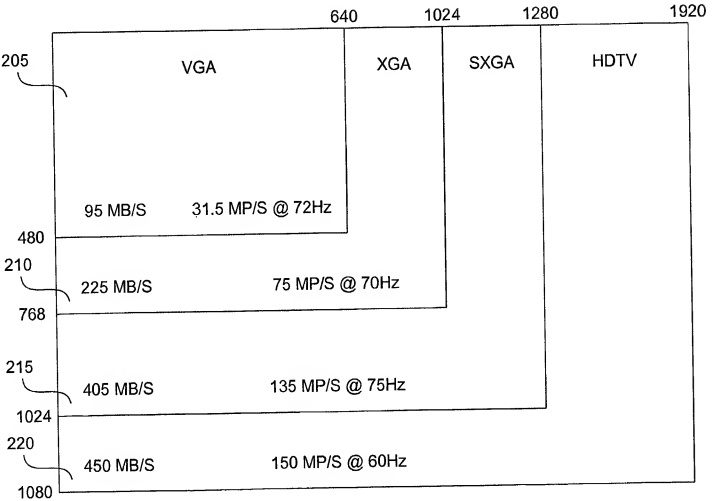

FIG. 3A

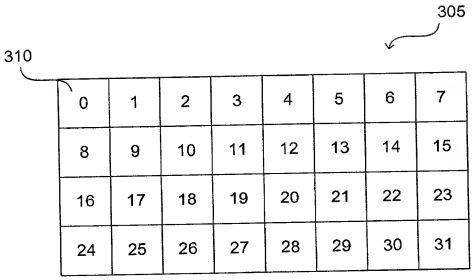

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FIG. 3B

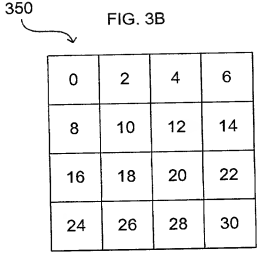

FIG. 3C

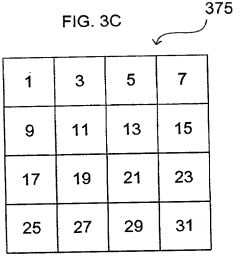

FIG. 4

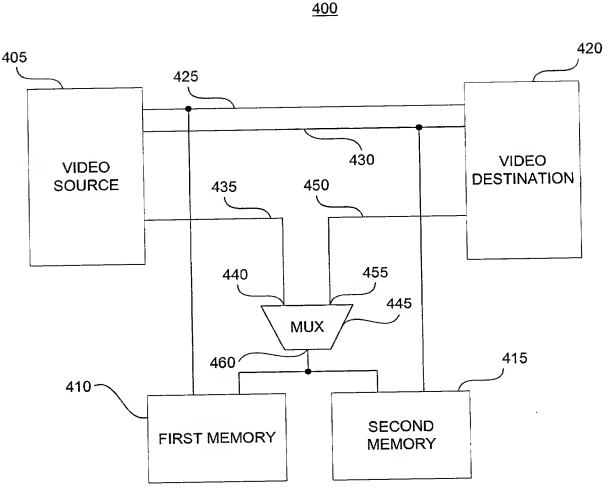
400
405
425
420
VIDEO SOURCE
430
VIDEO DESTINATION
435
450
440
455
445
MUX
460
415
410
FIRST MEMORY
SECOND MEMORY

FIG. 5

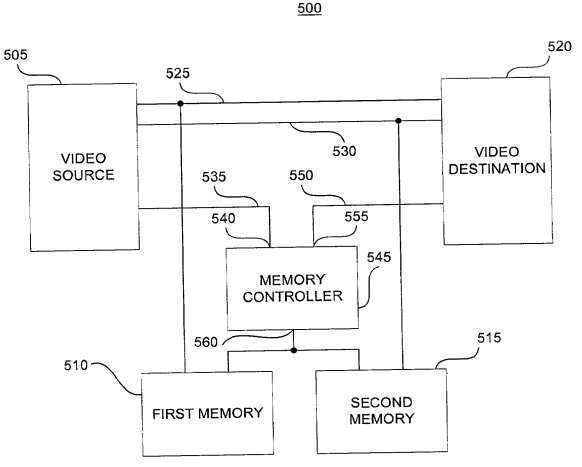
500
505
525
520
VIDEO SOURCE
530
VIDEO DESTINATION
535
550
540
555
MEMORY CONTROLLER
545
560
515
510
FIRST MEMORY
SECOND MEMORY

FIG. 6A

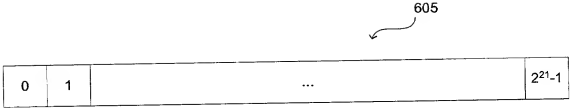

FIG. 6B

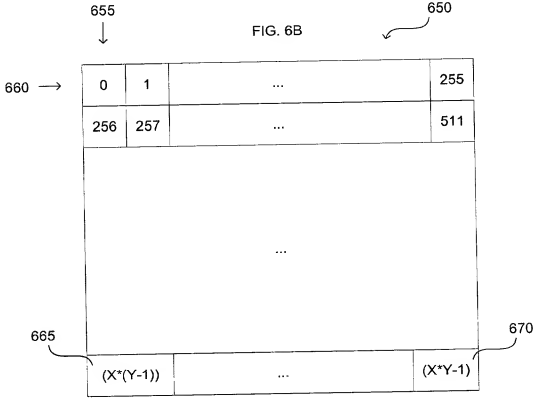

FIG. 6C

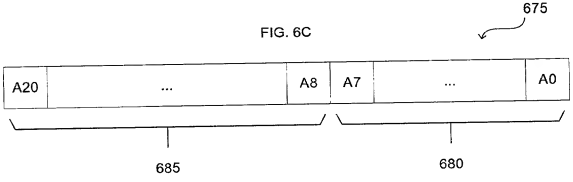

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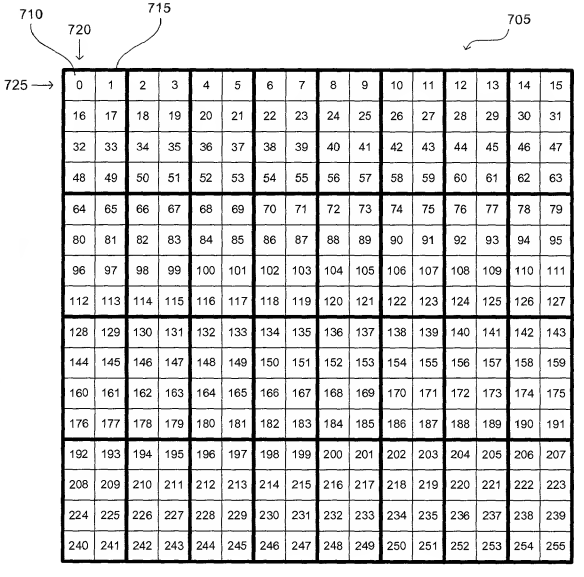
FIG. 7



0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

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FIG. 8A

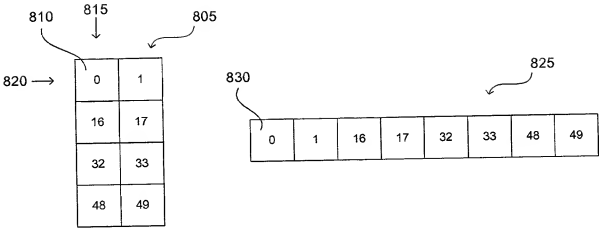

810
815
805
820
0
1
16
17
32
33
48
49
PIXELS
830
825
0
1
16
17
32
33
48
49

FIG. 8B

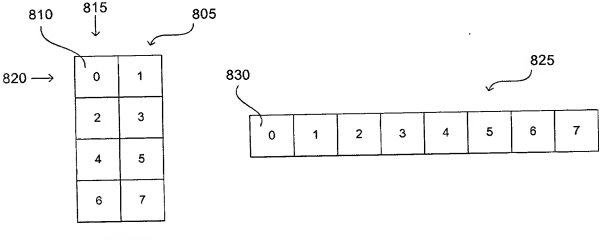
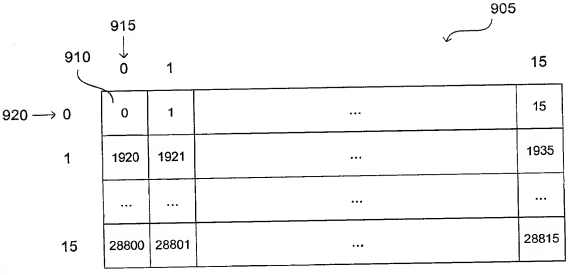

810
815
805
820
0
1
2
3
4
5
6
7
ADDRESSES
830
825
0
1
2
3
4
5
6
7

FIG. 9



20050110150302

FIG 10

1000

1005 PIXEL	1010 FRAME ROW	1015 FRAME COLUMN	1020 PIXEL PAGE	1025 PIXEL PAGE ROW	1030 PIXEL PAGE COLUMN	1035 MEMORY PAGE	1040 MEMORY ADDRESS
0	0	0	0	0	0	0	0
1	0	1	0	0	1	0	1
15	0	15	0	0	15	0	15
16	0	16	1	0	0	1	256
31	0	31	1	0	15	1	271
1919	0	1919	119	0	15	119	30479
1920	1	0	0	1	0	0	16
1921	1	1	0	1	1	0	17
1935	1	15	0	1	15	0	31
1936	1	16	1	1	0	1	272

FIG. 11

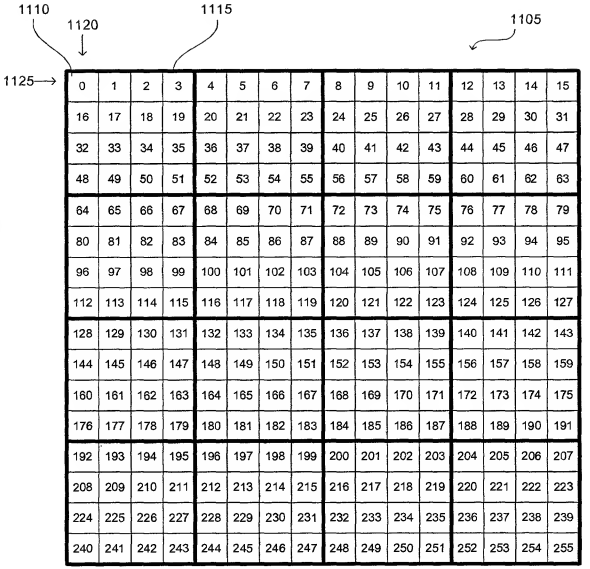


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FIG. 12

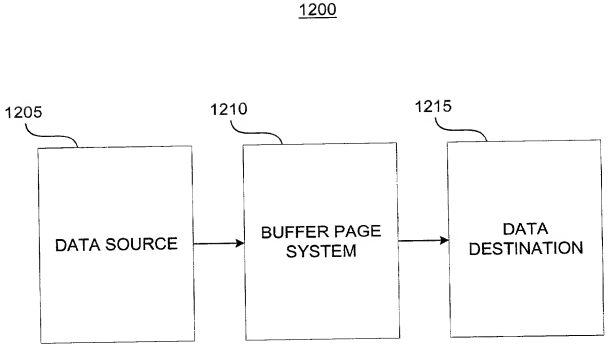
1200
1205
1210
1215
DATA SOURCE
BUFFER PAGE SYSTEM
DATA DESTINATION

FIG. 13

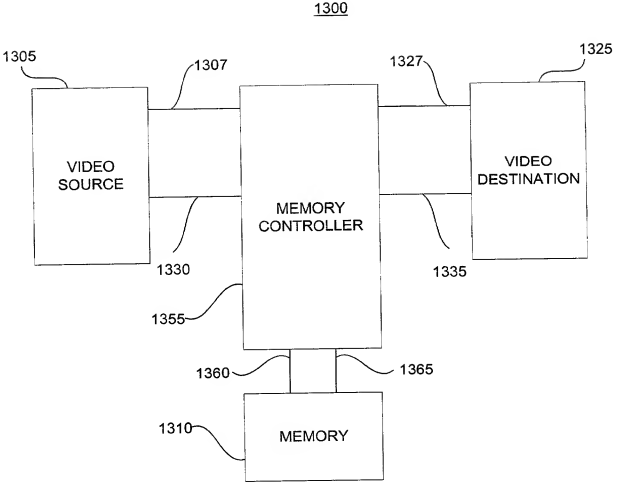
1300
1305
1307
1327
1325
VIDEO SOURCE
MEMORY CONTROLLER
VIDEO DESTINATION
1330
1335
1355
1360
1365
1310
MEMORY

FIG. 14

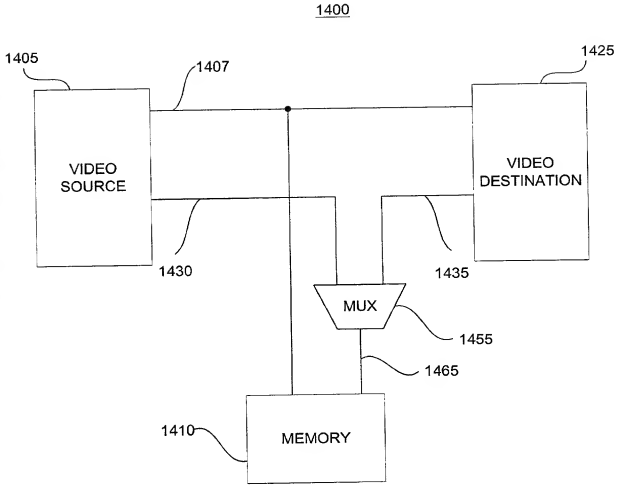
1400
1405
1407
1425
VIDEO SOURCE
VIDEO DESTINATION
1430
1435
MUX
1455
1465
1410
MEMORY

FIG. 15

1500

1505 PIXEL	1510 FRAME ROW	1515 FRAME COLUMN	1520 PIXEL PAGE	1525 PIXEL PAGE ROW	1530 PIXEL PAGE COLUMN	1535 MEMORY PAGE	1540 MEMORY ADDRESS
0	0	0	0	0	0	0	0
1	0	1	0	0	1	0	1
15	0	15	0	0	15	0	15
16	0	16	1	0	0	1	256
31	0	31	1	0	31	1	271
1919	0	1919	119	0	15	119	30479
1920	1	0	0	1	0	0	16
28800	15	0	0	15	0	0	240
28815	15	15	0	15	15	0	255
28831	15	31	1	15	15	1	511
30719	15	1919	119	15	15	119	30719
XXX	XXX	XXX	120	0	0	120	30720
30720	16	0	128	0	0	128	32768
2073599	1079	1919	8695	7	15	8695	2226047
XXX	XXX	XXX	8704	0	0	8704	2228224

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FIG. 16

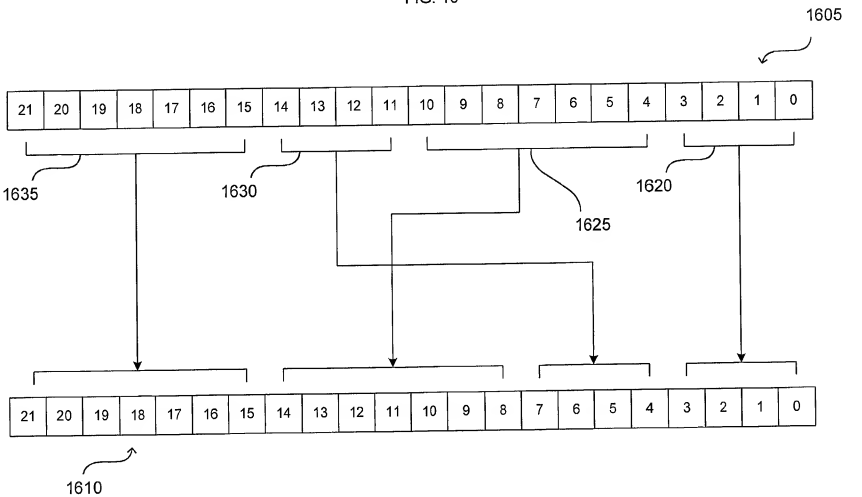

FIG. 17

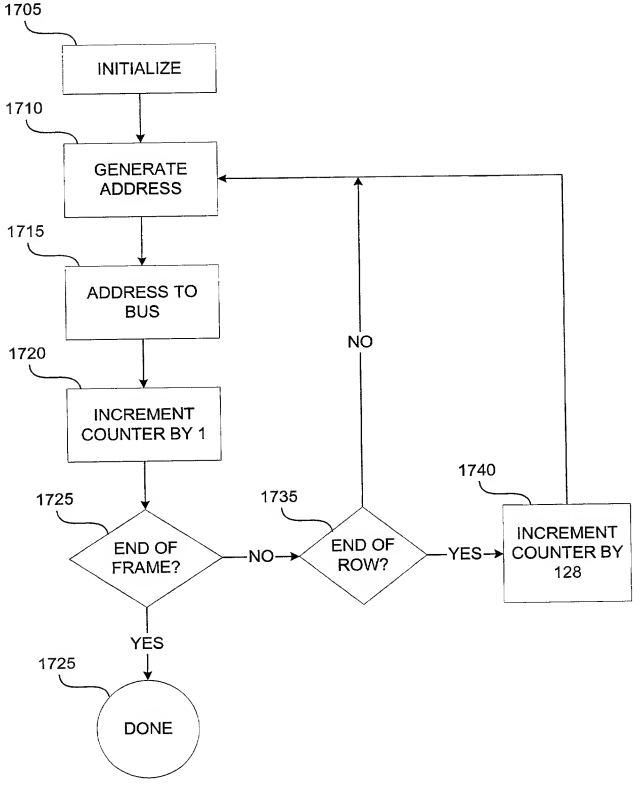

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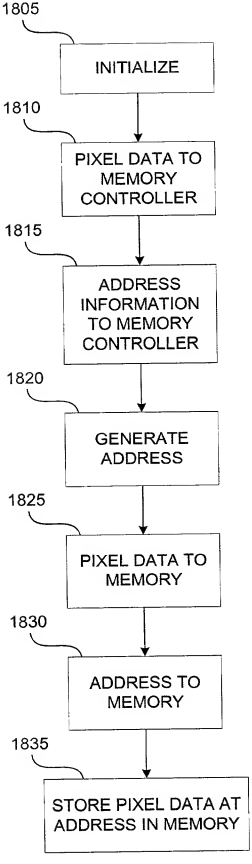
FIG. 18



20070114150802

FIG. 19

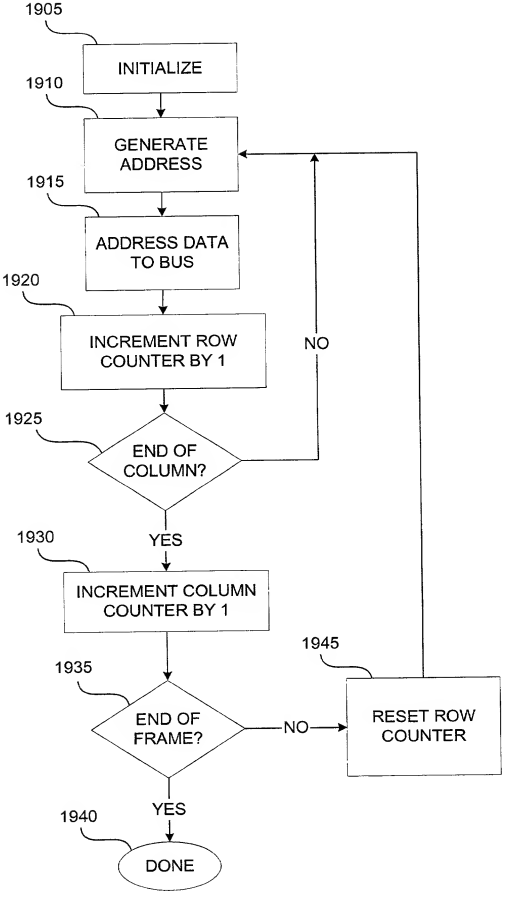

1905
INITIALIZE
1910
GENERATE ADDRESS
1915
ADDRESS DATA TO BUS
1920
INCREMENT ROW COUNTER BY 1
NO
1925
END OF COLUMN?
YES
1930
INCREMENT COLUMN COUNTER BY 1
1945
1935
END OF FRAME?
NO
RESET ROW COUNTER
YES
1940
DONE

FIG. 20

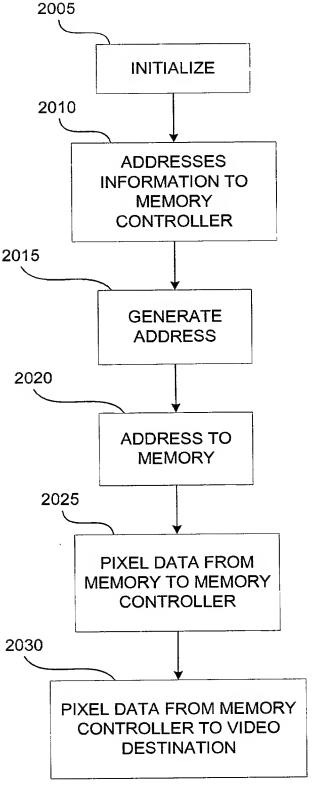


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FIG. 21

2100

2105 PIXEL	2110 FRAME ROW	2115 FRAME COLUMN	2120 PIXEL PAGE	2125 PIXEL PAGE ROW	2130 PIXEL PAGE COLUMN	2135 MEMORY PAGE	2140 MEMORY ADDRESS
0	0	0	0	0	0	0	0
1	0	1	0	0	1	0	1
15	0	15	0	0	15	0	15
16	0	16	1	0	16	1	256
31	0	31	1	0	31	1	271
1919	0	1919	119	0	15	119	30479
1920	1	0	0	1	0	0	16
28800	15	0	0	15	0	0	240
28815	15	15	0	31	15	0	255
28831	15	31	1	31	15	1	511
30719	15	1919	119	31	15	119	30719
30720	16	0	120	0	0	120	30720
30848	16	128	128	0	0	128	32768
2073599	1079	1919	8159	7	15	8159	2088831
XXX	XXX	XXX	8159	15	15	8159	2088959

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FIG. 22

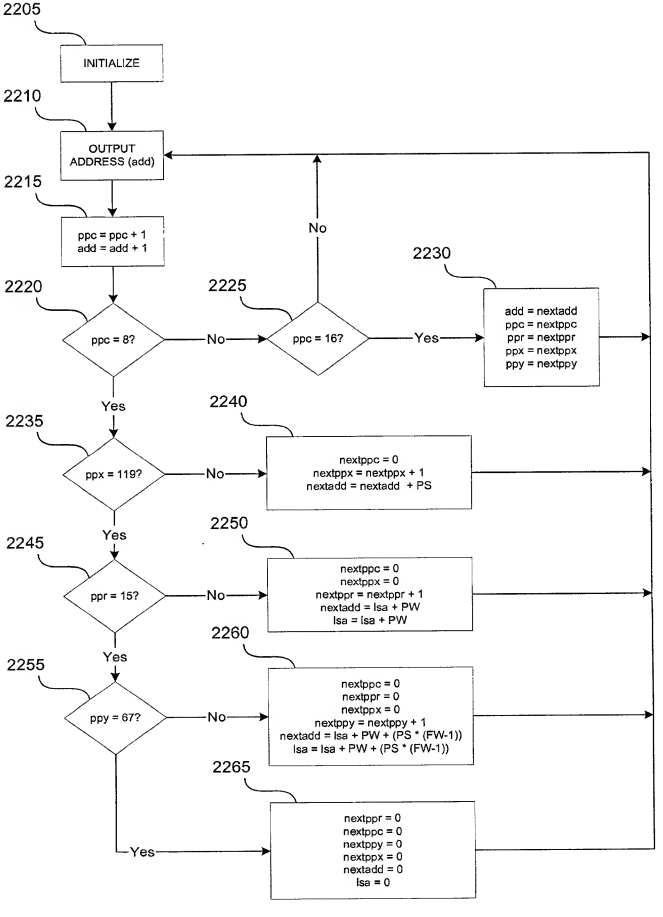

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FIG. 23

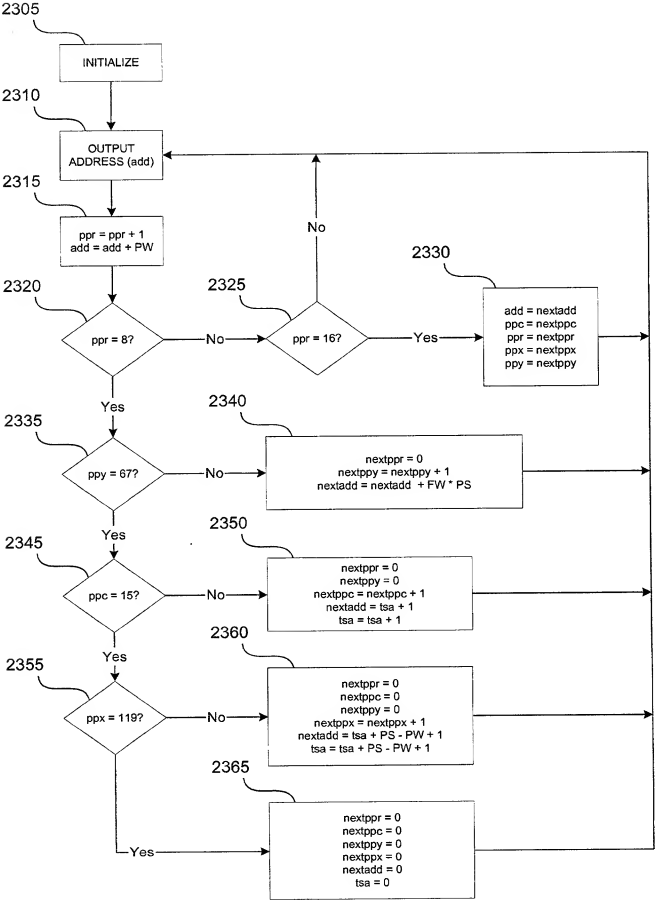
2305
INITIALIZE
2310
OUTPUT ADDRESS (add)
2315
ppr = ppr + 1
add = add + PW
2320
ppr = 8?
No
2325
ppr = 16?
No
Yes
2330
add = nextadd
ppc = nextppc
ppr = nextppr
ppx = nextppx
ppy = nextppy
Yes
2335
ppy = 67?
No
2340
nextppr = 0
nextppy = nextppy + 1
nextadd = nextadd + FW * PS
Yes
2345
ppc = 15?
No
2350
nextppr = 0
nextppy = 0
nextppc = nextppc + 1
nextadd = tsa + 1
tsa = tsa + 1
Yes
2355
ppx = 119?
No
2360
nextppr = 0
nextppc = 0
nextppy = 0
nextppx = nextppx + 1
nextadd = tsa + PS - PW + 1
tsa = tsa + PS - PW + 1
Yes
2365
nextppr = 0
nextppc = 0
nextppy = 0
nextppx = 0
nextadd = 0
tsa = 0

FIG. 24

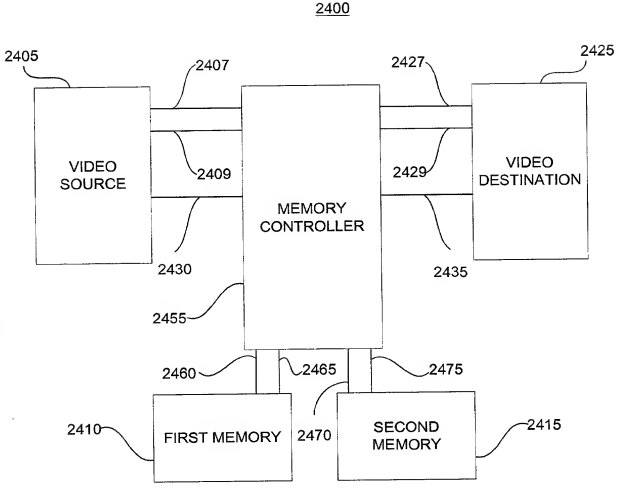
2400
2405
2407
2427
2425
VIDEO SOURCE
2409
2429
VIDEO DESTINATION
MEMORY CONTROLLER
2430
2435
2455
2460
2465
2475
2410
FIRST MEMORY
2470
SECOND MEMORY
2415

FIG. 25

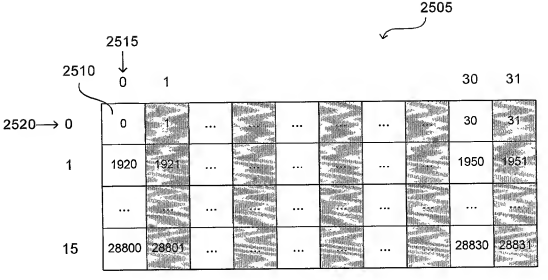
2505
2515
2510
0
1
30
31
2520
0
1
15
0
1
...
30
31
1920
1921
1950
1951
28800
28801
28830
28831

FIG. 26

2600

2605 PIXEL	2610 FRAME ROW	2615 FRAME COLUMN	2620 PIXEL PAGE	2625 PIXEL PAGE ROW	2630 PIXEL PAGE COLUMN	2635 MEMORY PAGE	2640 MEMORY ADDRESS	2645 MEMORY DEVICE
0	0	0	0	0	0	0	0	0
1	0	1	0	0	1	0	0	1
15	0	15	0	0	15	0	7	1
16	0	16	0	0	16	0	8	0
31	0	31	0	0	31	0	15	1
1919	0	1919	59	0	31	59	15119	1
1920	1	0	0	1	0	0	16	0
28800	15	0	0	15	0	0	240	0
28815	15	15	0	15	15	0	247	1
28831	15	31	0	15	31	0	255	1
30719	15	1919	59	15	31	59	15359	1
XXX	XXX	XXX	60	0	0	60	15360	0
30720	16	0	64	0	0	64	16384	0
2073599	1079	1919	4347	7	31	4347	1112959	1
XXX	XXX	XXX	4352	0	0	4352	1114112	0

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FIG. 27

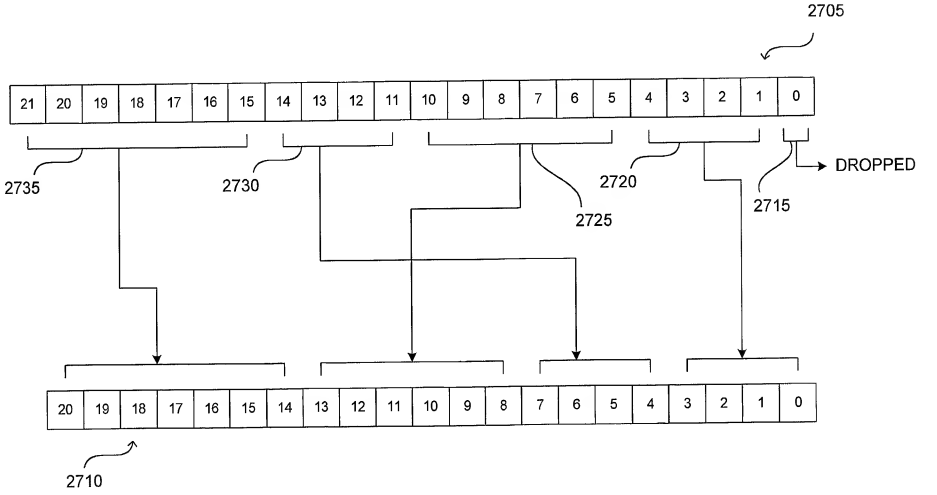
2705
21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
DROPPED
2735
2730
2725
2720
2715
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
2710

FIG. 28

2800

2805 PIXEL	2810 FRAME ROW	2815 FRAME COLUMN	2820 PIXEL PAGE	2825 PIXEL PAGE ROW	2830 PIXEL PAGE COLUMN	2835 MEMORY PAGE	2840 MEMORY ADDRESS	2845 MEMORY DEVICE
0	0	0	0	0	0	0	0	0
1	0	1	0	0	1	0	0	1
15	0	15	0	0	15	0	7	1
16	0	16	0	0	16	0	8	0
31	0	31	0	0	31	0	15	1
1919	0	1919	59	0	31	59	15119	1
1920	1	0	0	1	0	0	16	0
28800	15	0	0	15	0	0	240	0
28815	15	15	0	15	15	0	247	1
28831	15	31	0	15	31	0	255	1
30719	15	1919	59	15	31	59	15359	1
30720	16	0	60	0	0	60	15360	0
30848	16	128	64	0	0	64	16384	0
2073599	1079	1919	4079	7	31	4079	1044351	1
XXX	XXX	XXX	4079	15	31	4079	1044479	1

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FIG. 29

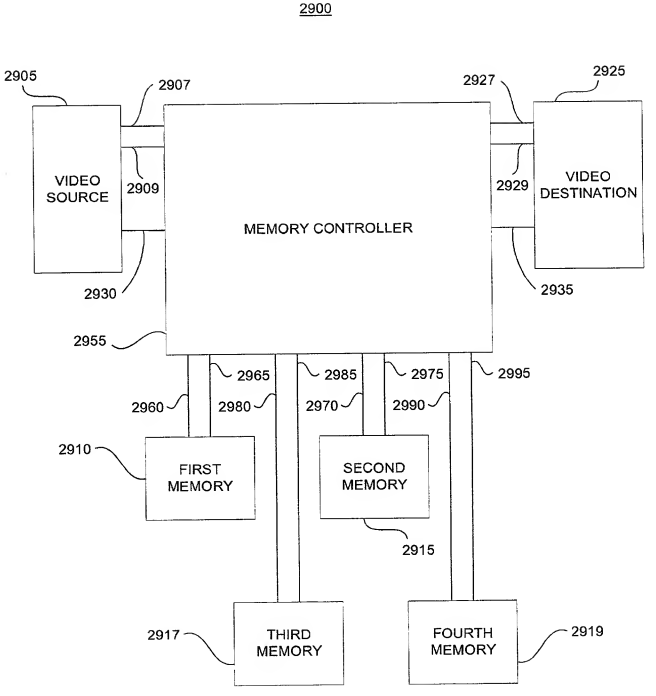
2900
2905
2907
2927
2925
VIDEO SOURCE
2909
MEMORY CONTROLLER
2929
VIDEO DESTINATION
2930
2935
2955
2965
2985
2975
2995
2960
2980
2970
2990
2910
FIRST MEMORY
SECOND MEMORY
2915
2917
THIRD MEMORY
FOURTH MEMORY
2919

FIG. 30

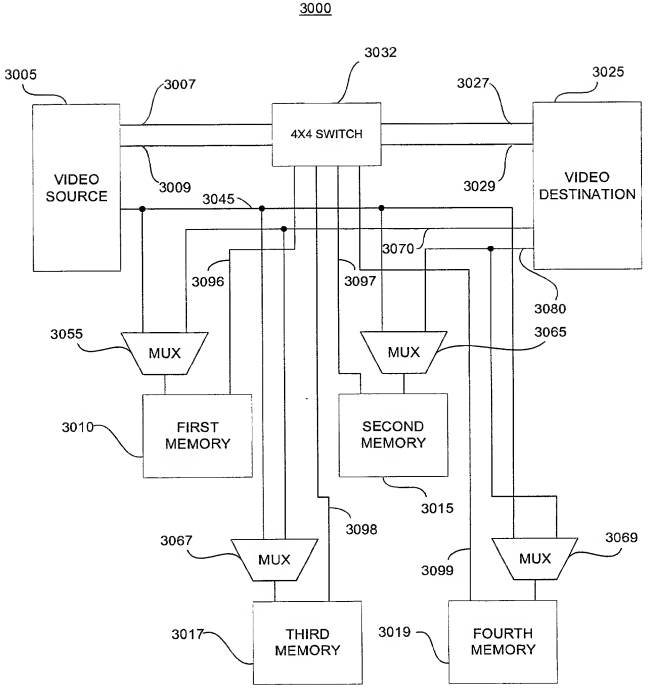
3000
3005
3007
3032
3027
3025
VIDEO SOURCE
4X4 SWITCH
VIDEO DESTINATION
3009
3045
3029
3070
3096
3097
3080
3055
MUX
MUX
3065
3010
FIRST MEMORY
SECOND MEMORY
3015
3098
3067
MUX
3069
3099
MUX
3017
THIRD MEMORY
3019
FOURTH MEMORY

FIG. 31

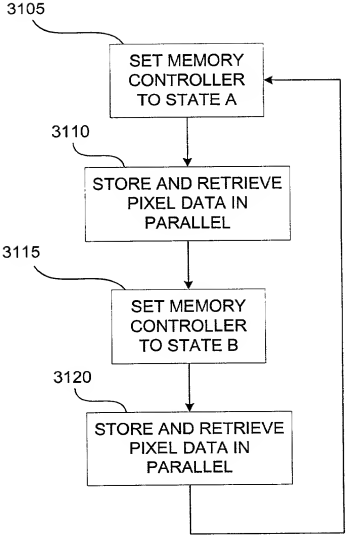

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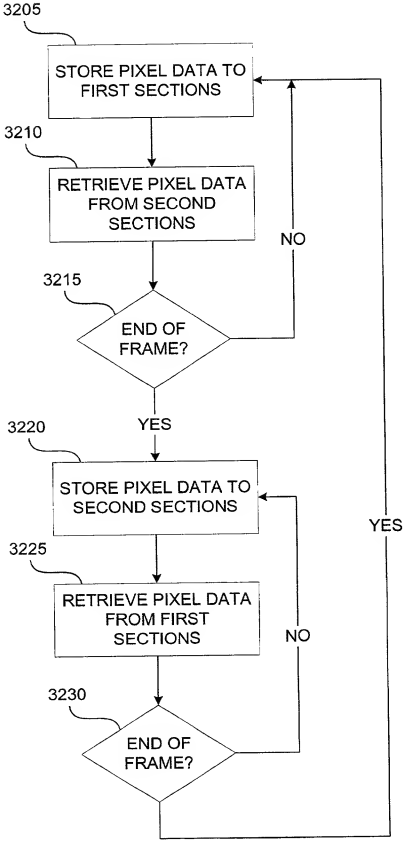
FIG. 32


3205
STORE PIXEL DATA TO FIRST SECTIONS
3210
RETRIEVE PIXEL DATA FROM SECOND SECTIONS
NO
3215
END OF FRAME?
YES
3220
STORE PIXEL DATA TO SECOND SECTIONS
YES
3225
RETRIEVE PIXEL DATA FROM FIRST SECTIONS
NO
3230
END OF FRAME?